

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A mixture of recombinant cells, each cell of which comprises:

- (i) ~~a an-expressible~~ recombinant gene encoding a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signal; and
- (ii) ~~a an-expressible~~ recombinant gene encoding a heterologous test potential-receptor effector polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor.

wherein collectively the mixture of cells expresses a variegated population of said ~~test receptor-effector~~ polypeptides, and modulation of the signal transduction activity of the orphan cell surface receptor ~~protein~~ by one of said [[a]] heterologous test polypeptides that reacts with said orphan cell surface receptor will provide[[s]] a detectable signal.

2. **(Currently Amended)** A mixture of recombinant cells, each cell of which comprises:

- (i) a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signals;
- (ii) ~~a an-expressible~~ recombinant gene encoding a heterologous test potential-receptor effector polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor; and
- (iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~activity~~ of the orphan cell surface receptor ~~protein~~,

wherein collectively the mixture of cells expresses a variegated population of test polypeptides.

3-4. **(Cancelled)**

5. **(Currently Amended)** A mixture of recombinant cells, each cell of which comprises:

- (i) ~~a~~ an orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signals;
- (ii) ~~a an-expressible~~ recombinant gene encoding a heterologous test potential-receptor effector polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor, and includes a signal sequence for secretion; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction ~~activity~~ activity of the orphan cell surface receptor protein, wherein collectively the mixture of cells expresses a variegated population of test polypeptides.

6-7. (Cancelled)

8. (Currently Amended) A mixture of recombinant yeast cells, each cell of which comprises:

- (i) ~~a an orphan~~ cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signal; and
- (ii) ~~a an-expressible~~ recombinant gene encoding a heterologous test potential-receptor effector polypeptide including a signal sequence for secretion, which is capable of being tested to determine if it reacts with said orphan cell surface receptor, wherein collectively the mixture of cells expresses a variegated population of test polypeptides ~~as-receptor effectors~~, and modulation of the signal transduction activity of the orphan cell surface receptor protein by a test polypeptide provides a detectable signal.

9. (Currently Amended) The recombinant cells of claim 8, wherein each cell further comprises a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~activity~~ of the orphan cell surface receptor ~~protein~~, expression of the reporter gene providing the detectable signal.

10. (Currently Amended) The recombinant cells of claim 8, wherein the reporter gene encodes a gene product that gives rise to a fluorescence detectable signal ~~selected from the group consisting of: color, fluorescence, luminescence, cell viability relief of a cell nutritional requirement, cell growth, and drug resistance.~~

11. (Currently Amended) The recombinant cells of claim 9, wherein the reporter gene encodes a beta-galactosidase gene product ~~selected from the group consisting of chloramphenicol acetyl transferase, beta-galactosidase and secreted alkaline phosphatase.~~

12-16. (Cancelled)

17. **(Currently Amended)** The recombinant cells of claim 8, wherein each cell further comprises a heterologous gene construct encoding the receptor ~~protein~~.

18-24. **(Cancelled)**

25. **(Original)** The recombinant cells of claim 8, wherein the variegated population of test polypeptides includes at least 10^3 different test polypeptides.

26. **(Currently Amended)** A recombinant yeast cell, comprising:

- (i) ~~a an-expressible~~ recombinant gene encoding a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by an extracellular signals;
- (ii) ~~a an-expressible~~ recombinant gene encoding a heterologous test ~~potential-receptor~~ effector polypeptide ~~including a signal sequence for secretion~~; and
- (iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~activity~~ of the orphan cell surface receptor ~~protein~~.

27. **(Currently Amended)** The recombinant cell of claim 26, wherein the reporter gene encodes a gene product that gives rise to a fluorescence detectable signal ~~selected from the group consisting of: color, fluorescence, luminescence, cell viability, relief of a cell nutritional requirement, cell growth, and drug resistance.~~

28-35. **(Cancelled)**

36. **(Currently Amended)** The recombinant cell of claim 26 ~~35~~, which yeast cell ~~cells~~ is a *Saccharomyces* cell.

37. **(Currently Amended)** The recombinant cell of claim 35, which yeast cell ~~cells~~ is a *Schizosaccharomyces* cell.

38. **(Cancelled)**

39. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

- (i) ~~a an-expressible~~ recombinant gene encoding a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by an extracellular signals;
- (ii) ~~a an-expressible~~ recombinant gene encoding a heterologous test potential-receptor effector polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor, and including includes a signal sequence for secretion; and
- (iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~activity~~ of the orphan cell surface receptor ~~protein~~,
wherein collectively the mixture of cells expresses a variegated population of test polypeptides.

40-49. **(Cancelled)**

50. **(Currently Amended)** The recombinant cell of claim 39 49, which yeast cell ~~cells~~ is a *Saccharomyces* cell.

51. **(Currently Amended)** The recombinant cell of claim 39 49, which yeast cells is a *Schizosaccharomyces* cell.

52. **(Cancelled)**

53. **(Original)** The recombinant cells of claim 39, wherein the variegated population of test polypeptides includes at least 10^3 different test polypeptides.